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Drug Safety Communication: Potential Increased Arrhythmia Risk from Lamotrigine

Lamotrigine is a sodium channel blocker that is used alone or in combination with other medicines to treat seizures. Lamotrigine may also be used as a maintenance treatment for bipolar disorder to help delay the occurrence of mood episodes such as depression, mania, or hypomania. On March 31, 2021, the U.S. Food and Drug Administration (FDA) announced a review of in vitro study findings showed a potential increased risk of arrhythmias in patients with heart disease who are taking lamotrigine.

The FDA required in vitro studies after receiving reports of abnormal electrocardiographic (ECG) findings and other serious problems including chest pain, loss of consciousness, and cardiac arrest in patients with heart disease who were taking lamotrigine. Laboratory tests have shown that at drug concentrations within the therapeutic range, lamotrigine can increase the risk of serious arrhythmias, possibly life-threatening, in patients with clinically important structural or functional heart disorders. Some of these conditions include heart failure, valvular heart disease, congenital heart disease, conduction system disease, ventricular arrhythmias, cardiac channelopathies, clinically significant ischemic heart disease, or multiple risk factors for coronary heart disease. The risk may be greater when lamotrigine is used in combination with other medications that block sodium channels in the heart.

Due to these findings, the FDA is now requiring additional studies to evaluate heart risk across the entire class of sodium channel blockers. At this time, other sodium channel blockers approved for epilepsy, bipolar disorder, and other indications should not be considered safer alternatives to lamotrigine in the absence of additional information.

To minimize risk to patients currently taking lamotrigine, health care professionals should consider the following actions:

- Assess whether the potential benefits of lamotrigine outweigh the potential risk of arrhythmias for each patient.
- Advise patients taking lamotrigine to contact their healthcare provider or seek immediate medical attention if they experience an abnormal heart rate or irregular rhythm, or symptoms such as a racing heartbeat, skipped or slow heartbeat, shortness of breath, dizziness, or fainting.
- Report side effects involving lamotrigine or other medications to the FDA MedWatch program.

The FDA has previously communicated the following safety information associated with lamotrigine:

- April 2018 – serious immune system reaction
- August 2010 – aseptic meningitis
- May 2009 – suicidal thoughts and behavior
- September 2006 – possible association between exposure during pregnancy and cleft palate in newborns

To read the full safety announcement, which includes the full list of sodium channel blockers required to conduct postmarket studies, refer to the article "Studies show increased risk of heart rhythm problems with seizures and mental health medicine lamotrigine (Lamictal) in patients with heart disease" found on the Drug Safety and Availability page of the FDA website.